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FOOD SELECTION FOR RATIONAL AND ECONOMICAL LIVING

BY C. F. LANGWORTHY

CHIEF, OFFICE OF HOME ECONOMICS, STATES RELATIONS SERVICE, U. S. DEPARTMENT OF AGRICULTURE

THERE are a number of factors which should be taken into account when one discusses diet with reference to its adequacy and economy and to the satisfaction which it gives. Among these are a knowledge of local markets and standards of food quality; wise selection of food; preparation and cookery; and the planning of meals, or, as it is so commonly called, "menu-making." The last of these is by far the most important, and will therefore be discussed at the greatest length, though the others logically precede it.

By a knowledge of markets is meant not only knowledge of the location of butchers, grocers and other dealers in food in one's neighborhood or town, but also a good idea of the reliability of the different dealers, the quality of the goods which they offer, the relation of the cash or credit systems of selling to their prices, and other such things. To be complete it should also include some understanding of the production and distribution of food materials; such information, for instance, as would lead the housekeeper to purchase local-grown goods when possible, not only because they may be fresher, but also because of the difference in their favor of transportation charges and hence of price. With respect to the quality of foods, the housekeeper should know, for instance, how to distinguish old and young poultry, and tough, overfat or overripe meats; she should know the relative merits of wilted and fresh vegetables, being able to tell when the former can be freshened or when they include too much inevitable waste to be economical. Other illustrations might be cited, but these are sufficient to show what is meant. A knowledge of markets and of quality of food products as related to final value calls for a wide range of information, much of which can be taught and some of which must be gained by experience.

Wise choice of foods involves possession of other lines of information and experience which enables the housekeeper to purchase to good advantage. She must realize that out-of-season foods, like strawberries or green peas in January, will be more expensive, and no more nutritious, than the same foods in early summer, while foods which are uncommon at all times, like fresh mushrooms, will be more expensive than cabbage or carrots, which they closely resemble in nutritive value. She may select according to her circumstances, but she should do so "with her eyes open," and not in the belief that the superior virtues belong necessarily to the rare or the unusual. Then, too, one must take into account the quantities which can be handled advantageously in the home. It is the part of wisdom to purchase in quantity those supplies which can be easily stored and kept without deterioration, while such purchase would be decidedly unwise in the case of perishable foods, or if there are no proper storage facilities. One must take into account further the ability of the person who cooks to make acceptable dishes from the foods supplied. If she does not know how to make a palatable pot roast or similar dish from a tough cut of beef and does know how to broil a steak well, there may be some economy in choosing the steak. The suitability, with respect to the needs of the individual family, of the food purchased, is another important consideration. Thus, a good deal of waste comes from the purchase of meats which give too large cuts for the family tastes. For instance, if the chops purchased are so large that the individual portion which would be served (usually one large or two small chops) is larger than the eater's average appetite, part of the meat may be left on the plate and thrown away. The housekeeper, therefore, should take pains to provide materials which can be served in portions to "fit" the family tastes.

The relative amount of time, labor and fuel which is required in preparing foods for the table has a decided influence upon actual as compared with apparent cost. The busy housekeeper who wishes to prepare breakfast quickly may recognize this when she pays a higher price per pound for some ready-to-eat cereal, which at most only requires to be warmed before serving, instead of buying a breakfast cereal costing less per pound but which must be cooked for several hours. If she prefers a cereal which needs longer cooking, she should know that she can begin to cook it when the evening meal is prepared, and finish it either in the fireless cooker or while she is preparing breakfast the next morning. The more she appreciates and acts upon such considerations, the more likely she is to provide a satisfactory diet which is also an economical one.

Cookery and other matters pertaining to the preparation of food for the table are particularly important from the standpoint of economy and satisfaction. Here, as elsewhere, knowledge of the "art of dressing food," to use an old phrase, is very important. It may be learned by experience (usually at much cost), or from the mother or other members of one's family, as has been the rule in the past, or, like other arts, it may be learned in school, as is increasingly the case under the changed conditions of the present day. The housekeeper needs such knowledge, whether she applies it herself, or whether she directs some one else. If, in addition to the art of cookery, she understands relative food values and other technical matters pertaining to food and its uses, her task of providing a rational diet will be the easier.

She should not be parsimonious in her household management, neither should she be extravagant, and to this end she should understand and practise rational economy. She must realize, for instance, that a large amount of garbage means needless waste, due to carelessness, to excessive purchase, to overgenerous service, to poor cooking, or to menus which do not please the members of the family.

She should be familiar with economical practises and usages and with practical ways of saving materials, having wisdom to make use of those which are really worth while and to avoid those which merely seem economical. As an illustration, it is possible to be economical in the use of fat and yet keep up a good standard of living. This implies careful use of the fats purchased for the table and for cooking, and also the use of fats commonly thrown away. The proper "salvage" and use of chicken fat, rendered suet, bacon fat, and other fats commonly wasted, which are, so to speak, by-products of raw materials or of cookery, will enable her to economize in the amount of butter and other fats purchased as such. She may take a hint from the commercial baker, who realizes that stale bread and cake, dried and ground, can replace about one fourth of the flour used in making many kinds of cookies, cakes, and other foods. She must appreciate the importance of careful preparation of food materials and recognize that thin paring of fruits and vegetables is less wasteful than careless paring, and that soaking dried foods like navy beans, dried peaches, etc., before cooking them economizes fuel by lessening the time of cooking required. She must know that it is possible to make palatable yet economical dishes by extending the flavor of some more expensive food through a fairly large proportion of a cheaper food of blander flavor, as is done when a small amount of meat is combined with a large proportion of potatoes, carrots, and other vegetables in making a meat stew. On the other hand, she should see that it is poor economy to use a pint of cream and several eggs to save a cupful of cold boiled rice or farina which might better go into the soup kettle.

The last factor, namely, the planning of meals, is very important and places a great responsibility upon the housekeeper, since it determines whether or not the diet provides the body with all the materials it requires. It is a problem which is often well solved by the housekeeper on the basis of empirical or other knowledge, but which is almost certain to be wrongly solved if such knowledge is lacking. Certainly, it is one regarding which there is much ignorance and many misconceptions. At one extreme are those, and they probably represent the great majority, who consider their meals only in reference to palatability—a selection which may be rational if they have learned good food habits, and fortunately, there is much empirical teaching on food habits which is sound. At the other extreme are those who heed all the fantastic statements they come across regarding specific medicinal or even semi-magic virtues ascribed to certain foods, who place their hopes in some particular type of food materials, or who fear lest they may suffer by "eating incompatibles," and so on through the long list of dietetic fads and fancies. Many, however, are not long deceived, their common sense warning them that, if such doctrines were true and important, the race could hardly have survived its alleged dietary indiscretions. Between these extremes stand a rapidly increasing number who seriously desire to understand and apply the principles of dietetics as they are now expounded by the more generally accepted authorities.

A fundamental principle is that the diet, considered for any reasonable length of time, must supply a great variety of chemical substances combined in different ways for the "structural" needs of the body, and also must supply it with energy-yielding substances with which it may perform internal and external work. It seems apparent that a varied diet, reasonably generous in amount, is more likely to meet the body needs than one restricted or unvarying in its make up or scant in quantity. The more knowledge and judgment used in its selection, the better the diet is likely to be.

In discussing diet, the expression "balanced ration" is often used, no doubt because it occurs so often, and to such good purpose, in discussions of animal feeding. Those who employ the term should remember that the feeder of live stock not only selects the kind of food which the horse or the steer is to eat but measures the quantity. The housekeeper, the physician, and the nurse do this for the infant and sometimes for the person who is ill or otherwise compelled to live under circumstances in which the diet is definitely controlled. The housekeeper does not do this when under normal conditions she provides a meal for her family to select from and eat of at will. Such freedom of choice is compatible with rational living and should for the best ends be accompanied by rational food habits which can be early taught in childhood, or, if need be, acquired later in life. Therefore, the term "balanced" is, and is likely to remain, inaccurate for general discussions of dietetics, and the term "well-selected" should be given the preference.

The character of the meals which the housekeeper will provide is determined largely by racial and regional influences and also by fashion. In the United States the general character of the diet is like that in the British Isles, with many minor modifications contributed by the other races which go to make up our population. Thus, we have meat with potatoes and one or more other vegetables and a dessert for the simple dinner, with the addition of soup and salad for a more elaborate one. As an example of foreign influence may be cited the serving of macaroni and cheese as one of the vegetables at dinner, or the use of sauerkraut with pork.

The influence of fashion or custom is shown in such a matter as the preference for a meal of a given type; for instance, the continental breakfast of rolls and coffee in comparison with the English breakfast of jam, toast, eggs or meat, and tea, or the American breakfast of which fresh fruit and breakfast cereal so commonly form a part, usually accompanied by more hearty foods. We may prefer one type or another, because we have always known it or because we have learned to like it, but the whole matter is chiefly one of custom; and it is the same way with other meals. Fashion also governs quite largely the choice and the combinations of foods for a given meal; for instance, there is no inherent reason why peas instead of string beans should be served with lamb, or why we should serve apple sauce with pork and currant jelly with mutton rather than the other way around. We instinctively follow conventions, but we must not overlook the importance of so following our preference that we get distinct variety from meal to meal and from day to day. The housekeeper who thinks about such matters will realize that serving sweet potatoes, white potatoes, Hubbard squash, and boiled rice at the same meal shows "poverty of invention," since she will realize that they are somehow alike, even if she does not know that all are characterized by the presence in relatively large proportion of carbohydrates. Nor would she be happier in her choice if she served such a combination of green vegetables as spinach, asparagus, cabbage, and cauliflower, since all are similar members of the green vegetable group. Most palates would be better pleased if she had scattered her dishes through several days, having white potatoes and spinach, for instance, on one day; asparagus and sweet potatoes on another day; and so on through the almost endless number of combinations of which the food list permits; and had included in the menu such other types as seed and fruit vegetables (green beans and peas, tomatoes, cucumbers, green corn, melons, and so on). Not only would this be more pleasing to the person with discriminating taste, but it would also be more desirable from the standpoint of the rational selection of foods, since a person would be more likely to secure all of the food constituents which he needed from a mixed meal than from one of such sameness.

Furthermore, a survey of the available data on the subject of meals leads us to believe that it is possible to classify them into two distinct types (though admittedly this is only a very rough division)—namely, those which, for want of a better term, may be called the "hotel" or "restaurant" type and those which may be called the "family" type. In the former the principal dish chosen is likely to be a meat order, which may carry with it a moderate serving of potato and which is supplemented chiefly by bread and butter and possibly dessert, and less often a green salad, but which usually does not include a generous order of vegetables. In the second, or "family," type of meals the amount of meat served is likely to be smaller and the proportion of vegetables served very much larger, with dessert and bread and butter as well. If we follow the rapidly gaining theory that foods like meat, which yield an acid residue when assimilated, should be accompanied by a generous amount of foods like vegetables and fruits, which yield a distinctly alkaline residue when assimilated, the wisdom of the so-called household type of meal is apparent. We shall find also, if we consider its chemical composition and energy value, that it is more likely than the other type to supply in reasonable proportion the necessary building and repair material and the energy-yielding substances required.

The number of meals taken in a day is significant chiefly as a convention or fashion. With the reasonably generous breakfast of the American family the lunch or supper is likely to be moderate and the dinner generous. On the other hand, it is natural enough that with the light breakfast of Continental Europe there should go either the second breakfast and supper or the hearty lunch as well as the dinner. Apparently the number of meals taken does not greatly influence the amount eaten per day, for the man who goes without his breakfast is very likely to make up for it at dinner or supper, while the man who eats an early breakfast and then a second breakfast will be likely to take a moderate lunch or a light dinner. Good food habits do not permit of gluttony.

The housekeeper who tries to provide a varied menu should realize that in general variety can be secured in two ways, either by using a considerable number of dissimilar food materials or by using varied methods of cookery with a smaller number of food materials. While both methods have their uses and both should be taken advantage of, it is well to remember that the first is the one more likely to provide variety from a chemical standpoint.

As regards the amount of food required, satisfaction and rational living demand that the amounts provided should be adequate, while economy demands that the amount should not be so great as to lead to over-eating or to needless waste. It may seem generous to serve a person more than he can eat, but it is not wise, since it means material left on the plate, only to be thrown away. It is better to give a smaller serving and offer a second helping. Proper care in such matters as well as in the selection and preparation of food should mean a considerable saving. The possibility of saving is made clear by the fact that the waste observed in studies of several hundred American families ranged from practically nothing to 20 per cent. of the food purchased.

It is also apparent that good dietary habits are important. These can be taught and are best learned in childhood. We should not allow children to grow up with whims, fancies and aversions respecting their food. They can be taught to like all the ordinary foods, and this should be done unless it becomes apparent (and this rarely happens) that some article of diet is distinctly harmful because of an idiosyncrasy toward it.

For the guidance of the food expert (dietitian or other specially trained worker), dietary standards have been proposed which show the proportion of protein and energy which the daily diet should supply. Such dietary standards are designed as guides for home and institution management, and should not be confused with expressions of physiological requirement. In quantitative discussions and in comparisons, one should always distinguish clearly between "food purchased," "food eaten" and "food digested," and should take the further precaution not only to compare like things, but to compare them on a uniform basis. The basis most often selected for comparing dietaries is the food or diet of "a man in the period of full vigor weighing 150 pounds and engaged in moderate to active muscular work," and factors for computing the requirement of men, women and children in other circumstances in terms of this standard have been worked out. These precautions should always be taken in comparing the results of dietary observations, experiments and studies; otherwise, avoidable confusion results. If they are so taken into account many of the seeming differences of opinion which sometimes lead to divergent conclusions will be found non-existent. When all precautions are taken for accuracy in comparisons and discussions, differences in the amounts of protein and energy found in the diet of different persons and different races are still apparent, as well as differences of opinion as to the amount of nutrients and energy required or desirable. Such differences of opinion, however, are not so great as one might expect, and one may well conclude, from a survey of the dietary studies of different races available, that persons of like age, sex and work, given an opportunity to select, instinctively choose diets showing, when reduced to uniform terms, a decided similarity with respect to the protein and energy they supply. This is not surprising when one recalls that all reasonably normal men possess bodies and possibilities of using them which do not vary within such very wide limits. A steam-engine of a given size and type will require the same amount of fuel of a certain kind in Asia as would a duplicate engine in America, for the production of a like amount of power, and why should this not be true of the human engine as well?

A large number of dietary studies made in the United States considered in comparison with the other large number made elsewhere have led to the conclusion that not far from 100 grams of protein per day, along with 3,000 to 3,500 calories of energy, represents, for the typical man (in the period of full vigor, engaged in moderate to active muscular work), the quantities which the food purchased should supply. We have not as yet been able to test with any degree of certainty the protein optimum though data on the subject are abundant enough to indicate that the suggested value represents common race habits. With energy the case is different, for it is possible with the respiration calorimeter to test the accuracy of the value suggested in any given dietary standard. Such tests show that the values given above are in accord with actual measurements of the energy expenditure of individuals under the specified circumstances of work and rest.

A consideration of the results of American experiments and other data has led us to conclude that with our ordinary food habits, involving, as they do, the use of a considerable variety of foods in reasonably liberal quantities, one is justified for many purposes in discussing dietetics on the basis of energy only, since a diet which supplies 3,000 to 3,500 calories of energy per man per day, as ours so very commonly does, almost inevitably supplies the needed protein, ash, and other constituents also. Particularly is this the case when one takes pains to include in the diet a reasonable amount of milk, green vegetables and fruit. If we accept this conclusion as rational, it enables us to go ahead without controversy until the time comes when we have more abundant knowledge of the kinds and quantities of protein we need, of the functions of mineral elements and the best ways to meet our body needs for them, and of the nature of vitamines or other regulatory substances.

It is no new thing to realize that, although empirical knowledge and experience may lead to really good results, it is easier to achieve them if there is also special knowledge and training. Thinkers and writers in the past have given their time and attention to the problems of dietetics and have left us much which is interesting and useful. That we can discuss the problems more fully and more adequately at the present time is due to the great progress made in biology, physics, chemistry, medicine and other sciences. The question comes, how can we best translate the results of scientific investigation for the housekeeper's benefit. It was natural enough that at first we should try to do this in laboratory terms and expect the housekeeper to learn them. As a result, books, pamphlets, charts, etc., have been provided for her which in many cases can not be understood without special training, and for this time and opportunity are only too often lacking. Later has come the realization that, while the specialist who follows home economics as a profession needs wide and varied technical knowledge, the woman who practises the art of housekeeping chiefly needs, aside from the skill which she gains by experience, simple statements of facts and definite methods by which she may obtain desired results. With this realization has come the attempt to formulate more simple and pedagogically correct methods of instruction, and to provide illustrative material in pictorial or graphic rather than tabular and diagrammatic form. It starts with materials and facts familiar to the housekeeper and, as far as possible, applies standards which have been tested in practical as well as experimental use. Its advocates believe that by thus bringing practise and theory into direct and vital connection, their teaching is more likely than either the scientific or the empirical method of instruction not only to result in more rational housekeeping, but also to supply the element of culture which raises any labor to an occupation.

In its studies of methods for imparting information through its extension and other activities, the Department of Agriculture has endeavored to classify common foods in a way corresponding to their distinctive functions in nutrition. The division must be more or less arbitrary, for some foods could go almost equally well in two or more groups. Thus milk, which is a general food, is included with the protein foods because it is a valuable source of this nutrient. Bread is a carbohydrate food, a protein food, and an ash-yielding food, but it is classed as a carbohydrate food because its most obvious constituent is starch, and because we use it in the same general way as we do starchy foods like potatoes. The classification as now arranged consists of five groups, and it is the understanding that each of these groups should be represented, if not at every meal, at least once a day, and that if an excessive number of food materials from any one group are used in the course of a day the result is likely to be unsatisfactory from the standpoint of rational dietetics or of taste.

The groups may be described in terms of the dietitian as follows: (1) Foods in which protein bears a higher proportion to fuel value than it does in the well-chosen diet as a whole; (2) those in which fuel value is high in proportion to protein, owing chiefly to the presence of much starch; (3) those in which fuel value is high, owing to the large percentage of fat; (4) those whose chief value is mineral constituents and vegetable acids (the latter important from the standpoint of flavor as well as of body needs); and (5) those which (like the foods in Groups 2 and 3) have a high fuel value, but in this case due to the presence of sugar. From the standpoint of fuel value only, it is obvious that Groups 2 and 5 could be combined. From the standpoint of the well-chosen and palatable meal, on the other hand, they should be kept distinct, since sugar is frequently as important as a flavor as it is as a food.

In housekeepers' terms the groups may be described as: (1) Flesh foods (except the very fattest), milk, cheese, eggs and such meat substitutes as dried beans, peas, and other legumes, and some of the nuts; (2) starchy foods; (3) fat foods; (4) watery fruits and vegetables (excluding dried legumes and fruits which have been dried or combined with much sugar); and (5) sweets.

The grouping is easy to remember and provides a guide for the housekeeper in the selection of food materials for a meal or for a day's ration and also a means of checking up and criticizing the meals which have been served.

It is obvious that while some foods belong clearly to one group, sugar and honey to Group 5, for example, and liver and veal (which contain

Some Common Foods Grouped According to Their Characteristics

(All five groups should be represented in the diet every day)

Group 1	Group 2	Group 3	Group 4	Group 5
Foods Characterized by Protein	Foods Characterized by Starch and Similar Carbohydrates	Foods Characterized by Fat	Foods Characterized by Mineral Substances and Organic Acids	Foods Characterized by Sugars
Lean meats Poultry Fish Oysters, etc. Milk Cheese Eggs Dried legumes Nuts	Bread Crackers Macaroni Rice Cereal breakfast foods, meals and flours	Butter Cream Lard and other culinary fats Salt pork Bacon Chocolate	Spinach Peas Lettuce Potatoes Turnips Apples Oranges Berries	Sirup Honey Jellies Dried fruits Candy
And other protein-rich foods	And other cereal foods	And other fatty foods	And other vegetables and fruits, raw or cooked	And other sweets

very little fat) clearly to Group 1, other foods are difficult to classify. Mutton, for example, is a protein food which might also be classed as a fat food, and dried navy beans might be classed as a protein and also as a starchy food. To cite another example, potatoes, which are an important source of mineral substance, with some organic acid, are included in Group 4 rather than in Group 2, which at first thought might seem the more logical place for them when we recall that they are so generally used as a source of carbohydrate (starch). In general, however, the system of groupings will be found helpful.

The following sets of menus contain none but wholesome and desirable food materials. These food materials, however, have been poorly combined so far as the protein, fat, and carbohydrate which they provide are concerned. The first set is characterized by much protein, the second set by much fat, and the third set by much carbohydrate.

Menus with Protein Predominating

Breakfast: Cereal cooked in milk, chicken hash with egg, popovers, butter and milk as a beverage.

Dinner: Dried-bean purée, halibut steak, potatoes scalloped in milk, tomatoes stuffed with chopped beef, bread and butter, and frozen custard with nut cookies.

Lunch or supper: Baked beans, nut bread and butter, old-fashioned rice pudding, and a glass of milk.

The following shows a day's menus (not at all unusual or peculiar) in which fat foods predominate.

Menus with Fat Predominating

Breakfast: Oatmeal with cream, sausage, and corn bread and butter.

Dinner: Cream of tomato soup, mutton chop with creamed potatoes, greens cooked with bacon or pork, bread, and suet pudding with hard sauce.

Lunch or supper: Creamed salmon, lettuce with oil dressing, tea biscuits and butter, pumpkin pie, and a cup of chocolate.

The following is an example of three meals of combinations common enough but in which carbohydrate (starch and sugar) predominates.

MENUS WITH CARBOHYDRATE PREDOMINATING

Breakfast: An orange followed by corn cakes with maple syrup, and bread or toast and butter.

Dinner: Meat pie and baked potato, green peas, bread and butter, and cottage pudding with chocolate sauce.

Lunch or supper: Rice croquettes with jelly, rye bread and butter, baked apples, and sugar cookies.

The food and fuel values of the menus served are given below, the portions served being of the average and usual size for an adult.

THE COMPOSITION OF THE NUTRIENTS AND THE ENERGY SUPPLIED BY THE MENUS USED FOR ILLUSTRATION

	Weight of Edible Food Served, Grams	Protein, Grams	Fat Grams	Carbohydrates, Grams	Fuel Value, Calories
Protein meals:					
Breakfast	471	36	50	54	810
Dinner	772	58	64	120	1,288
Lunch or supper	639	33	38	105	894
Total	1,882	127	152	279	2,992
Fatty meals:					
Breakfast	353	24	69	58	949
Dinner	617	33	88	108	1,356
Lunch or supper	621	29	83	98	1,259
Total	1,591	86	240	264	3,564
Carbohydrate meals:					
Breakfast	509	15	32	168	1,020
Dinner	529	40	33	133	989
Lunch or supper	376	14	27	127	807
Total	1,414	69	92	428	2,816

Described in technical terms, for the benefit of the dietitian, the first day's menu supplies 4.2 grams of protein per 100 calories of energy, or 2,356 calories of energy per 100 grams of protein; the meals of the fatty menu, 2.4 grams of protein per 100 calories of energy, or 4,120 calories of energy per 100 grams of protein; and the meals of the starchy (carbohydrate) menu, 2.5 grams of protein per 100 calories of energy, or 4,081 calories of energy per 100 grams of protein.

Speaking in terms of the housekeeper; Into the first day's menu there went sixteen food materials other than fresh fruits and vegetables, of which nine were from Group 1. Milk entered into or made up ten dishes; eggs, four; nuts, two; and beef, fish, chicken, dried beans, and dried peas, each, one. Into the second day's menu went nineteen food materials other than fresh fruits and vegetables, of which nine were distinctly fatty foods (lard, oil, butter, cream, salt pork, and others), while the meat, fish, and even the cereal chosen were those which contained comparatively high percentages of fat. Into the third day's ration went eleven food materials, of which six were starchy or sugary (rye, wheat, corn, rice, maple syrup, cane sugar).

Thus, by unwise choice one characteristic of the well-chosen diet—a right proportion between protein and fuel—was omitted.

It is hardly necessary to say that different combinations of vegetables and fruits may be made in which the proportion of mild vegetable acids and ash to the other nutrients in the total diet may vary widely—a fact which could be shown by similar groupings of food materials into menus.

To benefit by well-selected menus, each member of the family should eat all of the kinds of food provided, for, if a person habitually eliminates some particular sort of food as fruits and green vegetables, he has failed to take advantage of the housekeeper's selection, no matter how good it may be. One must, speaking broadly, relish all kinds of food, which is a matter of good habits and good manners as well as of physiological importance.

The housekeeper who will learn the simple classification of foods mentioned above can easily see the relation of the different groups of foods to the character of the meals she provides. She need only go a step further to realize that it is wiser to provide dishes varied in character for a given meal, and also meals varying from those of the same day and varying from day to day. She can do this easily by taking care to see that the different food groups are represented in at least two of the three meals she serves each day. The more extended her information as to market facilities, the wider her knowledge of standards of quality, the wiser her selection of foods, and the greater her skill in preparing and cooking them, the easier it will be for her to plan meals by this or any other method, which will be reasonable, economical and satisfactory, as well as adequate.

She can understand also that it is more important to apply the principle outlined to a considerable period of time than to a single day. A departure from the ideal for a day or so means little, for it can be made up the next day or the next week, while an irrational diet, if followed for a long period, may lead to marked disturbance or even serious illness.

The housekeeper need not go into the reasons for all these things which she has to attend to, but she will be quick to see in a general way the point of it all in so far as it concerns her problem of preparing suitable meals for her family. She need not know the theories of electricity to use and appreciate an electric light, nor need she be burdened with the theories of dietetics, if she is willing to trust the conclusions others have reached and apply them to her particular problems.

She naturally wishes for some tangible proof that her efforts to provide a rational diet as part of her good housekeeping are meeting with success. The general condition of her family should offer her fairly good evidence. Thus, it seems fair to say that the child who continues to approximate the average for his years with respect to weight and height, who is apparently normal in respect to work and play, and who exhibits none of the obvious symptoms of ill health can not be very faultily fed, any more than can be the adult who remains in fairly constant weight for long periods of time, making due allowance for the seasonal variations (such as the small loss in weight in summer and the small gain in winter), and has other attributes of good health. As one reaches middle life it is wise to be more abstemious in matters of diet, as in other things, for the body is "slowing down" and becoming less active and so needs less food. If, in any case, things do not seem to be as they should be, advice should be sought from a physician or other expert, as he alone can judge whether there is an actual departure from normal and whether it is due to diet or to some other cause.

Experience shows clearly that the experimental and the professional worker can be more helpful to the housekeeper than heretofore. The Department of Agriculture is doing what it can to accomplish this important end. The method for translating technical matters of diet into housekeepers' terms, which is outlined above, is an attempt to do this. The method can be modified as experience indicates is desirable, and the subject-matter can be amended to keep pace with the results of investigation and experiment.

What we can now do to help the housekeeper solve her problems falls short of the ideal, but, at any rate, what has been accomplished would seem sufficient to show her that her problems are recognized as worthy of study, and that an extended and consistent effort is being made to give them the attention they merit. In this movement the United States Department of Agriculture is taking part to the full extent of its opportunities.